UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE		FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/731,529	12/06/2000		Daniel J. Miller	MS1-633US	9575

				EXAMINER
22801	7590	01/20/2004		PATEL, HARESH N

LEE & HAYES PLLC
421 W RIVERSIDE AVENUE SUITE 500
SPOKANE, WA 99201

ART UNIT	PAPER NUMBER
2154	

DATE MAILED: 01/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Offic Action Summary	09/731,529	MILLER ET AL.
	Examiner	Art Unit	
	Haresh Patel	2154	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-40</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-40</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>06 December 2000</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.
37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific
reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2 and 3</u>.

4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: .

DETAILED ACTION

1.   Claims 1-40 are presented for examination.

Specification

2.   The disclosure is objected. Some of the informalities are:

     i.   The section "CROSS-REFERENCE TO RELATED APPLICATIONS" is missing copending and related applications.

     ii.   The "Field of the Invention" sub-section of the "BACKGROUND OF THE INVENTION" does not contain key terms of the claimed invention, i.e., parsing of audio and video contents.

     iii.   On pages 8-10, the serial numbers of the cited related applications is missing. All the cited references from the disclosure need to be moved into the "CROSS-REFERENCE TO RELATED APPLICATIONS" section.

     Appropriate correction is required.

3.   The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

     The following title is suggested: "A multimedia processing system parsing audio and video contents from a single source to minimize instances of media source files".

4.   The abstract of the disclosure is objected to because it does not provide clarification of the term "filter graph". Correction is required.

Information Disclosure Statement

5.   An initialed and dated copy of Applicant's IDS form 1449, Paper No. 2 and 3, is attached

to the instant Office action.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6.   As per claims 1-17, 20-33 and 35-40 merely claimed as a computer program representing

a computer listing *per se*, that is, descriptions or expressions of such a program and that is,

descriptive material *per se*, non-functional descriptive material, and is not statutory because it is

not a physical "thing" nor a statutory process, as there are not "acts" being performed. Such

claimed computer programs do not define any structural and functional interrelationships

between the computer program and other claimed aspects of the invention, which permit the

computer program's functionality to be realized. Since a computer program is merely a set of

instructions capable of being executed by a computer, the program itself is not a process, without

the computer-readable medium needed to realize the computer program's functionality. In

contrast, a claimed computer-readable medium encoded with a computer program defines

structural and functional interrelationships between the computer program and the medium

which permit the computer program's functionality to be realized, and is thus statutory.

Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760. **In re Sarkar**, 588 F.2d 1330, 1333, 200

USPQ 132, 137 (CCPA 1978). See MPEP § 2106(IV)(B)(1)(a).

As per claims 1 –17, a media processing system interface is a software object containing

software objects, which communicate with each other. As per claims 20 –33, a filter graph is a

software object containing software objects, i.e., video processing subsystem, audio processing

subsystem, a parser, which communicate with each other. As per claims 35-40, a parser and

processing subsystems are software objects, which communicate with each other. Just having

software on a software medium does not over come the statutory rejection. Applicant needs to

provide appropriate method steps to overcome the statutory rejection. Also the method steps

should be related to the physical entities and not just implementing the software within software

itself.

Claim Objections

7.   Claim 28 is objected to because of the following informalities:

Claim 28 mentions that "source is no longer required from a select one of the media

processing subsystems", which is incorrect.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making
and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it
pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode
contemplated by the inventor of carrying out his invention.

8.   Claim 28, 30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with

the enablement requirement. The claim(s) contains subject matter, which was not described in

the specification in such a way as to enable one skilled in the art to which it pertains, or with

which it is most nearly connected, to make and/or use the invention.

Claim 28 recites the term "the parser object only responds to an indication that the source

is no longer required from a select one of the media processing system". There is insufficient

antecedent basis for this limitation in the claim.

Claim 30 recites the term "the parser object ignores indications that the source is no

longer required from the audio processing subsystem". There is insufficient antecedent basis for

this limitation in the claim.

Claim 32 recites the term "the parser ensures that both subsystems no longer require

content from the source before unloading source filter strings". There is insufficient antecedent

basis for this limitation in the claim.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

9.   Claims 1, 2, 5-7, 13, 15, 16 and 32 are rejected under 35 U.S.C. 112, second paragraph,

as being indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention.

10.   The term "software object, exposed from the operating system" in claims 2, 15 and 16 is

a relative term, which renders the claim indefinite.

11.   The term "to individual ones of the two or more outputs based, at least in part, on the

media type of the subset" in claim 1 is a relative term, which renders the claim indefinite.

12.   The term "upon completion by" in claim 5 is a relative term, which renders the claim

indefinite.

13.   The term "source chain" in claims 6 and 7 is a relative term, which renders the claim

indefinite.

14.   The term "some fashion" in claim 13 is a relative term, which renders the claim

indefinite.

15.   The term "as an input pin" in claim 15 is a relative term, which renders the claim

indefinite.

16.   The term "as instances of an output pin" in claim 16 is a relative term, which renders the

claim indefinite.

17.   The term "source filter strings" in claim 32 is a relative term, which renders the claim

indefinite.

Claim Rejections - 35 USC § 103

18.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

19.   Claims 1, 18-26, 33-35, are rejected under 35 U.S.C. 103(a) as being unpatentable over

Griffiths 5,913,038 in view of Wu et. al. 5,982,360 (Hereafter Wu).

20.   As per claims 1, 18, 19, 20, 34, 35, Griffiths teaches the following:

a media processing system interface comprising:

a storage medium comprising a plurality of executable instructions which, when executed, implement a media processing system interface,

a computer system comprising: a storage medium having stored thereon a plurality of executable instructions; and an execution unit, coupled to the storage medium, to execute at least a subset of the plurality of executable instructions to, implement a media processing system interface,

a filter graph implemented within a media processing system, the filter graph comprising:

a filter graph (e.g., filter graph manager implementing filter graph, figure 2),

a video processing subsystem to process video content (e.g., video codec transform filter, figure 3),

an audio processing subsystem to process audio content (e.g., audio render filter, figure 3).

However, Griffiths does not specifically mention about a parser parsing audio and video contents from a single source.

Wu teaches the following:

a parser object, coupling one or more of the video processing subsystem and the audio processing subsystem to a single instance of a multimedia source, to selectively provide the audio subsystem and video subsystem with requested audio content and video content, respectively. (e.g., The present invention achieves the above-identified objects by providing an adaptive-selection method for memory access priority control in an MPEG processor. The processor has functional modules that include a CPU for parsing the audio compressed data and the video compressed data from the MPEG compressed data, and a memory controller is used to

arbitrate the access priority of each of the modules over the data bus for accessing the memory.

The access priority of the CPU to the data bus is maintained at a relatively lower level except

when the CPU needs to perform parsing on the MPEG compressed data and implementing the

initial decoding of the audio compressed data. The use of data bus bandwidth is therefore

balanced among all the system resources thereby increasing the overall system performance, col.,

1, line 8 – col., 9, line 62).

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine the teachings of Griffiths with the teachings of Wu in order to facilitate a

multimedia processing system to parse audio and video contents from a single source containing

both audio and video contents to better utilize system resources.

21.   As per claims 21-24, 37, Wu teaches the following:

Wu teaches the following:

the parser is comprised of at least one input, coupled to the source, and two outputs, one

each coupled to the video processing subsystem and the audio processing subsystem (e.g., The

present invention achieves the above-identified objects by providing an adaptive-selection

method for memory access priority control in an MPEG processor. The processor has functional

modules that include a CPU for parsing the audio compressed data and the video compressed

data from the MPEG compressed data, and a memory controller is used to arbitrate the access

priority of each of the modules over the data bus for accessing the memory. The access priority

of the CPU to the data bus is maintained at a relatively lower level except when the CPU needs ·

to perform parsing on the MPEG compressed data and implementing the initial decoding of the

audio compressed data. The use of data bus bandwidth is therefore balanced among all the

system resources thereby increasing the overall system performance, figures 1-3, col., 1, line 8 –

col., 9, line 62),

the parser object receives request for content from each of audio processing subsystem

and the video processing subsystem and serializes such requests, processing them in

chronological order (e.g., they have to rotate in the endless cycle as all the functional modules in

the MPEG processor are equally assigned the same priority. This requires that each of them be

rotated in a loop, and each has to follow the same sequence of steps before it can get attended to,

col., 1, line 8 – col., 9, line 62),

the parser object receives requests for content from each of the audio processing

subsystem and the video processing subsystem and ignores requests received on all but a selected

one of such audio processing subsystem or video processing subsystem, the video processing

subsystem is the selected one from which requests for content are acted upon, while requests

from the audio processing subsystem are ignored (e.g., if the MPEG compressed data includes

MPEG compressed video data, raising the priority of the central processing unit to a fourth,

relatively high, priority, parsing the MPEG compressed audio and video data to generate parsed

audio data and parsed video data, col., 1, line 8 – col., 9, line 62).

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine the teachings of Griffiths with the teachings of Wu in order to facilitate a

multimedia processing system to parse audio and video contents from a single source containing

both audio and video contents to better utilize system resources. By having a priority higher for

handling the video content then handling the audio content would help maintain better picture
quality.

22.   As per claims 2-6, 25, 26, Griffiths teaches the following:

        the parser object receives indications from one or more of the audio processing

subsystem and/or the video processing subsystem that the source is no longer required (e.g., To

prevent the theoretical possibility of constructing an infinite chain of filters, however, this

process is completed for only a predetermined number or maximum number of filters in a chain,

preferably five filters. If the chain already includes the maximum set of filters without a

termination, then the present filter candidate is rejected. The filter graph manager 202 then

conducts a search of the table 220 to locate a filter with the next highest Merit figure. If a match

is not found, then the filter graph manager 202 coordinates disconnecting (and typically

unloading) the present filter and completes another search of the table to locate a replacement

filter. These graph building operations are completed by the filter graph manager 202 in a

recursive fashion until either success or failure is achieved, col., 2, line 17 – col., 5, line 34),

and, upon verifying that neither processing subsystem requires further content from the source

before a source filter chain including the parser object and both media processing subsystems

may be removed from the filter graph, the parser object informs a render engine that the source

filter chain is no longer required, whereupon the render engine may remove the source filter

chain from the filter graph (e.g., disconnecting (and typically unloading) the present filter and

completes another search of the table to locate a replacement filter. These graph building

operations are completed by the filter graph manager 202 in a recursive fashion until either success or failure is achieved, col., 2, line 17 – col., 5, line 34),

the media processing system interface is a software object, exposed from an operating system on computing system implementing the media processing system (e.g., The present invention is directed to controlling and processing of streams of multimedia data, and allows users to play digital movies encoded by the Motion Picture Experts Group (MPEG) compression method. The present invention provides a computer-implemented process for constructing a filter graph to combine filters for processing of multimedia data. The preferred embodiment of the present invention is represented by Microsoft's "ACTIVE MOVIE" Software Development Kit (SDK), which supports multimedia data control and processing for the "WINDOWS NT" and "WINDOWS 95" operating systems developed by Microsoft Corporation of Redmond, Wash, col., 1 – line 15 – col., 3, line 56),

source processing chain comprising each of the media processing subsystems coupled through the interface to the source is removed from an active filter graph upon completion by each of the media processing subsystems (e.g., Turning now to FIG. 3 for a representative example of the architecture of a typical filter graph, a filter graph 300 supports the processing of audio and compressed video by use of a chain of five filters. A source filter 302 can read the data from a source file, which is typically maintained on a local or remote storage medium. The source filter outputs source data to a splitter ransform filter 304. The splitter transform filter 304 can split the incoming data stream into a pair of data streams, namely video data and audio data streams, and pass these data streams to an audio renderer filter 306 and to a video CODEC filter 308. The audio renderer filter 306 can render the audio data stream to play the audio data via a

speaker (not shown). The video CODEC transform filter 308 can decompress the video data and

output a decompressed video data stream, col., 5, line 15, col., 8, line 25),

23.   Claims 7-17, 27-32, 36-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Griffiths and Wu in view of Hunt et al. 6,442,658 (Hereafter Hunt).

24.   As per claims 7-17, 27-32, 36-40, Hunt teaches the following:

        the render engine determines whether the source filter chain will be required

subsequently in this or another filter graph and, if so, caches the entire source filter chain for

later integration in the an appropriate filter graph (e.g., In one embodiment of the invention, in

addition to delivering resources in the order of a relative priority ranking, the resources are also

stored according to the relative priority ranking, thereby reducing the average seek time needed

to find and retrieve resources and further improving playback performance, abstract, col., 1, line

14 – col., 26, line 28),

        the parser object only responds to an indication that the source is no longer required from

a select one of the media processing subsystems, the parser only responds to the video processing

subsystem, an element of the video processing subsystem checks with other media processing

subsystems coupled to the parser object to determine whether they, too, no longer require content

from the source before instructing the parser object that the source is no longer required, the

parser ensures that both subsystems no longer require content from the source before unloading

source filter strings comprising the audio subsystem and the video subsystem, the parser receives

indications from each of the audio and video subsystems requesting content and resolves such

requests based, at least in part, on a priority of when such content is required in support of filter

graph execution (e.g., in a manner that provides improved performance regardless of the playback sequence selected by a user. In one embodiment of the present invention, for each segment of an interactive multimedia work, a probability factor is assigned to each possible alternative succeeding segment. In addition a retrieval and delivery time cost factor is also assigned to each possible succeeding segment. In one embodiment of the invention, the time cost factor for each resource is assigned a fixed value. In another embodiment, the time cost factor is recalculated periodically to reflect changes in location and status of resources. The probability and time cost factor for each possible succeeding segment are combined to produce a relative priority ranking. Resources for the possible succeeding segments are pre-loaded according to the relative priority ranking. As a result, the latency time between the time a segment is selected as a result of user input and the time at which execution of the segment begins is reduced and the performance of a multimedia work improved, abstract, col., 3, 26 - col., 5, line 20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Griffiths and Wu with the teachings of Hunt in order to facilitate a multimedia processing system to parse audio and video contents from a single source containing both audio and video contents to better utilize system resources. Also delivering resources in the order of a user desired priority defined in the media project would reduce the seek time and the amount of memory used to handle the retrieval of audio and video contents from the media source.

Conclusion

25.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

See Form PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Haresh Patel whose telephone number is (703) 605-5234. The examiner can normally be reached on Monday, Tuesday, Thursday and Friday from 10:00 am to 8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee, can be reached at (703) 305-8498.

The appropriate fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Haresh Patel

January 11, 2004

JOHN FOLLANSBEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100